Scale-Up: HyperStream

Overview: HyperStream/IT-Adventures and VREP, either independently or in combination, fosters real-world learning for 5th-12th graders through hands-on technology projects, competitions, showcases and engaging presentations through after-school clubs or integrated into curriculum, combined with the opportunity to work with technology mentors.

Program Summary

HyperStream/IT-Adventures and VREP, either independently or in combination, fosters real-world learning for 5th-12th graders through hands-on technology projects, competitions, showcases and engaging presentations through after-school clubs or integrated into curriculum, combined with the opportunity to work with technology mentors. Since 2008, the program brings the breadth of technology education to Iowa's students by providing a comprehensive STEM educational experience. Students may create their own technology projects that solve real-world issues for their school or community, as well as participate in several project tracks leading to spring competitions/showcases in robotics, game design/programming, cyber defense, multimedia, app development, and virtual reality. Combined the program is in nearly 200 Iowa schools/LEAs and growing. With HyperStream/IT-A, students in grades 5th-12th have the opportunity to be mentored by technology professionals from their local communities or via virtual communications. With VREP, 5th-12th grade students have the opportunity to work with virtual reality, while advised by their teachers.

Project Description/Objectives

- To raise awareness for technology careers across all industries, and STEM careers in general
- To provide 5th-12th grade students in middle schools, high schools and LEAs with the tools and resources to create technologies solving real-world challenges
- To provide a program that aligns with Century 21 skills, including problem-solving, innovation, teamwork, collaboration, initiative, leadership, adaptability, and effective communications.
- To see an increase in students going into post-secondary programs of technology, computer science, computer engineering, and engineering – whether at the community college or college level
- To keep students in Iowa to meet the supply of technology positions.

Grade Levels: 5-12

What is Provided by the Project

The following list details the scope of work that will be provided by the program provider.
Please note where differences may apply depending on the program option, i.e. HyperStream/IT-A or VREP.**1.** Program design and project track development for 6 tech areas (game design/programming, robotics, multimedia, cyber security, app development, virtual reality)**2.** Program and curriculum training for teachers/club advisers, including a teacher stipend for time and travel ($170)

Project learning modules, curriculum and kits for HyperStream/IT-Adventures tracks, OR program criteria and resource materials for VREP schools. Project mentoring/coaching by tech mentors (for HyperStream/IT-A Clubs). Note that VREP is designed for the students to be self-directed in these projects. 1. Field trip opportunities and potential internships and scholarships for students 2. Travel stipend ($250 per club) to attend IT-Adventures competition, VREP Showcase, or tech-related events.
HyperStream/IT-A competition in Ames for 9th-12th graders, or virtual competition for 5th-8th graders. VREP Showcase for 5th-12th graders working with virtual reality. 1. Virtual MentorPlace as a communications tool for virtual mentors with their assigned clubs. It also serves as a portal with archived presentations on specialized tech skills, technology by industry, and emerging technologies. This network communications between students, teachers/advisers, and tech mentors, as well as across clubs. 2. T-shirts and magnets for students, and posters/brochures for schools/LEAs & teachers to promote the program 3. Additional and optional learning opportunities: TAI's Women of Innovation day with Microsoft's DigiGirlz, TAI's annual Awards Banquet recognizing HyperStream Clubs of excellence, entrepreneurial tech-related programs.

What is Required by the School or Local Education Agency (LEA) in Order to Implement This Program:

Please note where differences may apply depending on program option, i.e. HyperStream(HS)/IT-A or VREP.HS/IT-A offered FREE to schools/LEAs. VREP: the program is FREE; equipment for virtual reality paid by school. School/LEA provides accessible environment with access to computers for project implementation. *. Minimum of one educator champion from the school/LEA to serve as a liaison. *. Educator champion(s) to provide timely communications with program staff relative to plans, stipends, registrations, surveys, etc. Responsible for recruiting students into the program and attending mandatory training. ***Educator champion responsible for attending HS/IT-A Club meetings/classes to facilitate student rapport and communications.

For VREP, students are monitored by an educator champion on their independent projects. * Educator champion(s) coordinate students' attendance in the program, and management of communications. * Educator champion(s) to ensure mandatory completion by students of surveys provided by program staff and STEM Council. Educators/club advisers will also be required to complete a program survey. * Educator champion(s)/chaperones to attend student competitions/showcases. Coordinate travel plans and expenses beyond $250 travel stipend provided. ***For HS/IT-A, register high school aged students for 2-day competition late April in Ames; and middle school aged students for virtual competition. For VREP, participate in regional and state Showcases. ***For HS/IT-A, school/LEA will be responsible to work in partnership with the HyperStream staff in seeking and/or solidifying technology mentors from their local community. ***HS/IT-A Meetings to be held minimum of twice a month; ideally weekly. For VREP, students work independently.

Website: http://hyperstream.org/index.php/for-educators/; www.it-adventures.org; www.vrep.org
Program Video: http://tinyurl.com/l5687wt